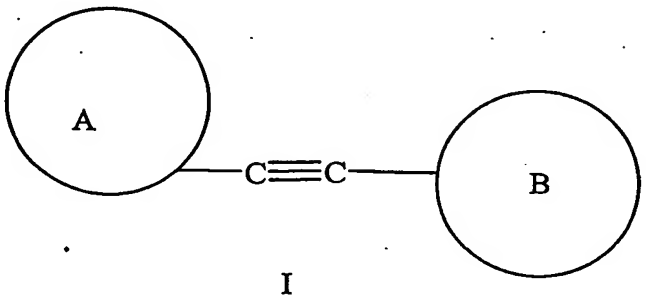
WHAT IS CLAIMED IS:

1. A compound represented by Formula I:



I

or a pharmaceutically acceptable salt thereof, wherein:

A is a heterocycle optionally substituted with one to five independent halogen, –CN, NO_2, -C_{1-6}alkyl, -C_{1-6}alkenyl, -C_{1-6}alkynyl,–OR^1, –NR^1R^2, –$C(=NR^1)NR^2R^3$, –$N(=NR^1)NR^2R^3$, –NR^1COR^2, -$NR^1CO_2R^2$, -$NR^1SO_2R^4$, –$NR^1CONR^2R^3$,–SR^4, -SOR^4, –SO_2R^4, –$SO_2NR^1R^2$, -COR^1, -CO_2R^1, –$CONR^1R^2$, -$C(=NR^1)R^2$, or –$C(=NOR^1)R^2$ substituents; wherein the alkyl, alkenyl or alkynyl may optionally be substituted with 1-5 independent halogen, –CN, –C_{1-6}alkyl, –$O(C_{0-6}alkyl)$, –$O(C_{3-7}cycloalkyl)$, –O(aryl), –$N(C_{0-6}alkyl)(C_{0-6}alkyl)$, -$N(C_{0-6}alkyl)(C_{3-7}cycloalkyl)$, –$N(C_{0-6}alkyl)$(aryl) substituents;

R^1, R^2, and R^3 each independently is –C_{0-6}alkyl, –C_{3-7}cycloalkyl, heteroaryl, or aryl; any of which is optionally substituted with 1-5 independent halogen, –CN, –C_{1-6}alkyl, –$O(C_{0-6}alkyl)$, –$O(C_{3-7}cycloalkyl)$, –O(aryl), –$N(C_{0-6}alkyl)(C_{0-6}alkyl)$, -$N(C_{0-6}alkyl)(C_{3-7}cycloalkyl)$, –$N(C_{0-6}alkyl)$(aryl) substituents;

R^4 is –C_{1-6}alkyl, –C_{3-7}cycloalkyl, heteroaryl, or aryl; optionally substituted with 1-5 independent halogen, –CN, –C_{1-6}alkyl, –$O(C_{0-6}alkyl)$, –$O(C_{3-7}cycloalkyl)$, -O(aryl), –$N(C_{0-6}alkyl)(C_{0-6}alkyl)$, –$N(C_{0-6}alkyl)(C_{3-7}cycloalkyl)$, –$N(C_{0-6}alkyl)$(aryl) substituents;

B is aryl, heterocycle, –C_{3-20}cycloalkyl, –C_{3-20}cycloalkenyl, –C_{3-20}cycloalkadienyl, –C_{3-20}cycloalkatrienyl, –C_{3-20}cycloalkynyl, –C_{3-20}cycloalkadiynyl; optionally substituted with one to five independent halogen,

–CN, NO_2, -C_{1-6}alkyl, -C_{1-6}alkenyl, -C_{1-6}alkynyl, -OR^5, –NR^5R^6, -$C(=NR^5)NR^6R^7$, -$N(=NR^5)NR^6R^7$, –NR^5COR^6, -$NR^5CO_2R^6$, -$NR^5SO_2R^8$, –$NR^5CONR^6R^7$, –SR^8, -SOR^8, –SO_2R^8, –$SO_2NR^5R^6$, -COR^5, -CO_2R^5, –$CONR^5R^6$, -$C(=NR^5)R^6$, –$C(=NOR^5)R^6$, aryl or heterocycle substituents; wherein the alkyl, alkenyl or alkynyl may optionally be substituted with 1-5 independent halogen, –CN, –C_{1-6}alkyl, –$O(C_{0-6}alkyl)$, –$O(C_{3-7}cycloalkyl)$, –O(aryl), –$N(C_{0-6}alkyl)(C_{0-6}alkyl)$, -$N(C_{0-6}alkyl)(C_{3-7}cycloalkyl)$, –$N(C_{0-6}alkyl)$(aryl) substituents;

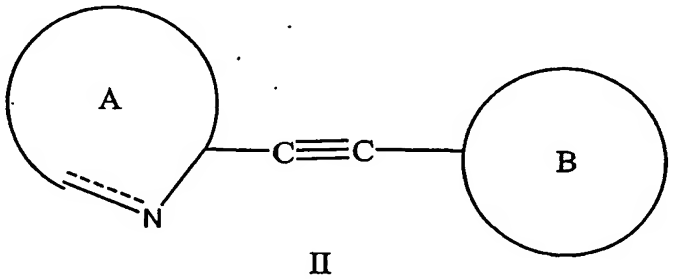
R^5, R^6, and R^7 each independently is –C_{0-6}alkyl, –C_{3-7}cycloalkyl, heteroaryl, or aryl; any of which is optionally substituted with 1-5 independent halogen, –CN, –C_{1-6}alkyl, –$O(C_{0-6}alkyl)$, –$O(C_{3-7}cycloalkyl)$, –O(aryl), –$N(C_{0-6}alkyl)(C_{0-6}alkyl)$, -$N(C_{0-6}alkyl)(C_{3-7}cycloalkyl)$, –$N(C_{0-6}alkyl)$(aryl) substituents;

R^8 is –C_{1-6}alkyl, –C_{3-7}cycloalkyl, heteroaryl, or aryl; optionally substituted with 1-5 independent halogen, –CN, –C_{1-6}alkyl, –$O(C_{0-6}alkyl)$, –$O(C_{3-7}cycloalkyl)$, -O(aryl), –$N(C_{0-6}alkyl)(C_{0-6}alkyl)$, –$N(C_{0-6}alkyl)(C_{3-7}cycloalkyl)$, –$N(C_{0-6}alkyl)$(aryl) substituents;

wherein the compound is isotopically labeled with at least one ^{11}C, ^{13}C, ^{14}C, ^{18}F, ^{15}O, ^{13}N, ^{35}S, ^{2}H, or ^{3}H atom;

except when A = 6-methyl-2-pyridyl then B cannot be 3-methoxyphenyl or unsubstituted phenyl.

2. A compound represented by Formula II:



II

or a pharmaceutically acceptable salt thereof, wherein:

A is pyridinyl, pyrrolyl, imidazolyl, pyridazinyl, pyrimidinyl, pyrazoyl, pyrazinyl, triazolyl, triazinyl, tetrazolyl, tetrazinyl, tetrazepinyl, isoxazolyl, oxazolyl, oxadiazolyl, oxatriazolyl, oxazinyl, oxadiazinyl, isothiazolyl, thiazolyl, thiadazinyl, thiadiazolyl, thiadiazepinyl, dioxazolyl, oxathiazolyl, oxathiazinyl, oxazepinyl, oxadiazepinyl, azepinyl, and diazepinyl, optionally substituted with one to five independent halogen, –CN, NO_2, -C_{1-6}alkyl, -C_{1-6}alkenyl, -C_{1-6}alkynyl,–OR^1, –NR^1R^2, –$C(=NR^1)NR^2R^3$, –$N(=NR^1)NR^2R^3$, –NR^1COR^2, -$NR^1CO_2R^2$, -$NR^1SO_2R^4$, –$NR^1CONR^2R^3$,–SR^4, -SOR^4, –SO_2R^4, –$SO_2NR^1R^2$, -COR^1, -CO_2R^1, –$CONR^1R^2$, -$C(=NR^1)R^2$, or –$C(=NOR^1)R^2$ substituents; wherein the alkyl, alkenyl or alkynyl may optionally be substituted with 1-5 independent halogen, –CN, –C_{1-6}alkyl, –O(C_{0-6}alkyl), –O(C_{3-7}cycloalkyl), –O(aryl), –N(C_{0-6}alkyl)(C_{0-6}alkyl), -N(C_{0-6}alkyl)(C_{3-7}cycloalkyl), –N(C_{0-6}alkyl)(aryl) substituents;

R^1, R^2, and R^3 each independently is –C_{0-6}alkyl, –C_{3-7}cycloalkyl, heteroaryl, or aryl; any of which is optionally substituted with 1-5 independent halogen, –CN, –C_{1-6}alkyl, –O(C_{0-6}alkyl), –O(C_{3-7}cycloalkyl), –O(aryl), –N(C_{0-6}alkyl)(C_{0-6}alkyl), -N(C_{0-6}alkyl)(C_{3-7}cycloalkyl), –N(C_{0-6}alkyl)(aryl) substituents;

R^4 is –C_{1-6}alkyl, –C_{3-7}cycloalkyl, heteroaryl, or aryl; optionally substituted with 1-5 independent halogen, –CN, –C_{1-6}alkyl, –O(C_{0-6}alkyl), –O(C_{3-7}cycloalkyl), -O(aryl), –N(C_{0-6}alkyl)(C_{0-6}alkyl), –N(C_{0-6}alkyl)(C_{3-7}cycloalkyl), –N(C_{0-6}alkyl)(aryl) substituents;

B is phenyl, –C_{3-20}cycloalkyl, –C_{3-20}cycloalkenyl, –C_{3-20}cycloalkadienyl, –C_{3-20}cycloalkatrienyl, –C_{3-20}cycloalkynyl, –C_{3-20}cycloalkadiynyl, indenyl, dihydroindenyl, naphthalenyl, dihydronaphthalenyl, pyridinyl, thiazolyl, furyl, dihydropyranyl, dihydrothiopyranyl, piperidinyl, isoxazolyl, pyridazinyl, pyrimidinyl, pyrazinyl, indolyl, quinolinyl, isoquinolinyl, optionally substituted with one to five independent halogen, –CN, NO_2, -C_{1-6}alkyl, -C_{1-6}alkenyl, -C_{1-6}alkynyl, -OR^5, –NR^5R^6, -$C(=NR^5)NR^6R^7$, -$N(=NR^5)NR^6R^7$, –NR^5COR^6, -$NR^5CO_2R^6$, -$NR^5SO_2R^8$, –$NR^5CONR^6R^7$,–SR^8, -SOR^8, –SO_2R^8, –$SO_2NR^5R^6$, -COR^5, -CO_2R^5, –$CONR^5R^6$, -$C(=NR^5)R^6$,–$C(=NOR^5)R^6$, aryl

or heterocycle substituents; wherein the alkyl, alkenyl or alkynyl may optionally be substituted with 1-5 independent halogen, –CN, –C_{1-6}alkyl, –O(C_{0-6}alkyl), –O(C_{3-7}cycloalkyl), –O(aryl), –N(C_{0-6}alkyl)(C_{0-6}alkyl), -N(C_{0-6}alkyl)(C_{3-7}cycloalkyl), –N(C_{0-6}alkyl)(aryl) substituents;

R^5, R^6, and R^7 each independently is –C_{0-6}alkyl, –C_{3-7}cycloalkyl, heteroaryl, or aryl; any of which is optionally substituted with 1-5 independent halogen, –CN, –C_{1-6}alkyl, –O(C_{0-6}alkyl), –O(C_{3-7}cycloalkyl), –O(aryl), –N(C_{0-6}alkyl)(C_{0-6}alkyl), -N(C_{0-6}alkyl)(C_{3-7}cycloalkyl), –N(C_{0-6}alkyl)(aryl) substituents;

R^8 is –C_{1-6}alkyl, –C_{3-7}cycloalkyl, heteroaryl, or aryl; optionally substituted with 1-5 independent halogen, –CN, –C_{1-6}alkyl, –O(C_{0-6}alkyl), –O(C_{3-7}cycloalkyl), -O(aryl), –N(C_{0-6}alkyl)(C_{0-6}alkyl), –N(C_{0-6}alkyl)(C_{3-7}cycloalkyl), –N(C_{0-6}alkyl)(aryl) substituents; and

wherein the compound is isotopically labeled with at least one ^{11}C, ^{13}C, ^{14}C, ^{18}F, ^{15}O, ^{13}N, ^{35}S, ^{2}H, or ^{3}H atom;

and except when A = 6-methyl-2-pyridyl then B cannot be 3-methoxyphenyl or unsubstituted phenyl.

3. The compound of claim 1 wherein A is pyridinyl, pyrrolyl, imidazolyl, pyridazinyl, pyrimidinyl, pyrazoyl, pyrazinyl, triazolyl, triazinyl, tetrazolyl, tetrazinyl, tetrazepinyl, isoxazolyl, oxazolyl, oxadiazolyl, oxatriazolyl, oxazinyl, oxadiazinyl, isothiazolyl, thiazolyl, thiadazinyl, thiadiazolyl, thiadiazepinyl, dioxazolyl, oxathiazolyl, oxathiazinyl, oxazepinyl, oxadiazepinyl, azepinyl, and diazepinyl, optionally substituted with one to five independent halogen, –CN, NO_2, -C_{1-6}alkyl, -C_{1-6}alkenyl, -C_{1-6}alkynyl,–OR^1, –NR^1R^2, –$C(=NR^1)NR^2R^3$, –$N(=NR^1)NR^2R^3$, –NR^1COR^2, -$NR^1CO_2R^2$, -$NR^1SO_2R^4$, –$NR^1CONR^2R^3$,–SR^4, -SOR^4, –SO_2R^4, –$SO_2NR^1R^2$, -COR^1, -CO_2R^1, –$CONR^1R^2$, -$C(=NR^1)R^2$, or –$C(=NOR^1)R^2$ substituents; wherein the alkyl, alkenyl or alkynyl may optionally be substituted with 1-5 independent halogen, –CN, –C_{1-6}alkyl, –O(C_{0-6}alkyl), –O(C_{3-7}cycloalkyl), –O(aryl), –N(C_{0-6}alkyl)(C_{0-6}alkyl), -N(C_{0-6}alkyl)(C_{3-7}cycloalkyl), –N(C_{0-6}alkyl)(aryl) substituents;

R^1, R^2, and R^3 each independently is $-C_{0-6}$alkyl, $-C_{3-7}$cycloalkyl, heteroaryl, or aryl; any of which is optionally substituted with 1-5 independent halogen, –CN, $-C_{1-6}$alkyl, $-O(C_{0-6}$alkyl), $-O(C_{3-7}$cycloalkyl), $-O$(aryl), $-N(C_{0-6}$alkyl)(C_{0-6}alkyl), $-N(C_{0-6}$alkyl)(C_{3-7}cycloalkyl), $-N(C_{0-6}$alkyl)(aryl) substituents;

R^4 is $-C_{1-6}$alkyl, $-C_{3-7}$cycloalkyl, heteroaryl, or aryl; optionally substituted with 1-5 independent halogen, –CN, $-C_{1-6}$alkyl, $-O(C_{0-6}$alkyl), $-O(C_{3-7}$cycloalkyl), $-O$(aryl), $-N(C_{0-6}$alkyl)(C_{0-6}alkyl), $-N(C_{0-6}$alkyl)(C_{3-7}cycloalkyl), $-N(C_{0-6}$alkyl)(aryl) substituents;

B is phenyl, $-C_{3-20}$cycloalkyl, $-C_{3-20}$cycloalkenyl, $-C_{3-20}$cycloalkadienyl, $-C_{3-20}$cycloalkatrienyl, $-C_{3-20}$cycloalkynyl, $-C_{3-20}$cycloalkadiynyl, indenyl, dihydroindenyl, naphthalenyl, dihydronaphthalenyl, pyridinyl, thiazolyl, furyl, dihydropyranyl, dihydrothiopyranyl, piperidinyl, isoxazolyl, pyridazinyl, pyrimidinyl, pyrazinyl, indolyl, quinolinyl, isoquinolinyl, optionally substituted with one to five independent halogen, –CN, NO_2, $-C_{1-6}$alkyl, $-C_{1-6}$alkenyl, $-C_{1-6}$alkynyl, $-OR^5$, $-NR^5R^6$, $-C(=NR^5)NR^6R^7$, $-N(=NR^5)NR^6R^7$, $-NR^5COR^6$, $-NR^5CO_2R^6$, $-NR^5SO_2R^8$, $-NR^5CONR^6R^7$, $-SR^8$, $-SOR^8$, $-SO_2R^8$, $-SO_2NR^5R^6$, $-COR^5$, $-CO_2R^5$, $-CONR^5R^6$, $-C(=NR^5)R^6$, $-C(=NOR^5)R^6$, aryl or heterocycle substituents; wherein the alkyl, alkenyl or alkynyl may optionally be substituted with 1-5 independent halogen, –CN, $-C_{1-6}$alkyl, $-O(C_{0-6}$alkyl), $-O(C_{3-7}$cycloalkyl), $-O$(aryl), $-N(C_{0-6}$alkyl)(C_{0-6}alkyl), $-N(C_{0-6}$alkyl)(C_{3-7}cycloalkyl), $-N(C_{0-6}$alkyl)(aryl) substituents;

R^5, R^6, and R^7 each independently is $-C_{0-6}$alkyl, $-C_{3-7}$cycloalkyl, heteroaryl, or aryl; any of which is optionally substituted with 1-5 independent halogen, –CN, $-C_{1-6}$alkyl, $-O(C_{0-6}$alkyl), $-O(C_{3-7}$cycloalkyl), $-O$(aryl), $-N(C_{0-6}$alkyl)(C_{0-6}alkyl), $-N(C_{0-6}$alkyl)(C_{3-7}cycloalkyl), $-N(C_{0-6}$alkyl)(aryl) substituents;

R^8 is $-C_{1-6}$alkyl, $-C_{3-7}$cycloalkyl, heteroaryl, or aryl; optionally substituted with 1-5 independent halogen, –CN, $-C_{1-6}$alkyl, $-O(C_{0-6}$alkyl), $-O(C_{3-7}$cycloalkyl), $-O$(aryl), $-N(C_{0-6}$alkyl)(C_{0-6}alkyl), $-N(C_{0-6}$alkyl)(C_{3-7}cycloalkyl), $-N(C_{0-6}$alkyl)(aryl) substituents or a pharmaceutically acceptable salt thereof; and

wherein the compound is isotopically labeled with at least one ^{11}C, ^{13}C, ^{14}C, ^{18}F, ^{15}O, ^{13}N, ^{35}S, ^{2}H, or ^{3}H atom;

and except when A = 6-methyl-2-pyridyl then B cannot be 3-methoxyphenyl or unsubstituted phenyl.

4. The compound of claim 2 wherein A is thiazolyl or isothiazolyl, optionally substituted with one to three independent halogen, –CN, NO_2, -C_{1-6}alkyl, -C_{1-6}alkenyl, -C_{1-6}alkynyl, –OR^1, –NR^1R^2, –$C(=NR^1)NR^2R^3$, –$N(=NR^1)NR^2R^3$, –NR^1COR^2, -$NR^1CO_2R^2$, -$NR^1SO_2R^4$, –$NR^1CONR^2R^3$,–SR^4, -SOR^4, –SO_2R^4, –$SO_2NR^1R^2$, -COR^1, -CO_2R^1, –$CONR^1R^2$, -$C(=NR^1)R^2$, or –$C(=NOR^1)R^2$ substituents; and

B is phenyl, –C_{3-20}cycloalkyl, –C_{3-20}cycloalkenyl, –C_{3-20}cycloalkadienyl, –C_{3-20}cycloalkatrienyl, –C_{3-20}cycloalkynyl, –C_{3-20}cycloalkadiynyl, indenyl, dihydroindenyl, naphthalenyl, dihydronaphthalenyl, pyridinyl, thiazolyl, furyl, dihydropyranyl, dihydrothiopyranyl, piperidinyl, isoxazolyl, pyridazinyl, pyrimidinyl, pyrazinyl, indolyl, quinolinyl, isoquinolinyl, optionally substituted with one to three independent halogen, –CN, NO_2, -C_{1-6}alkyl, -C_{1-6}alkenyl, -C_{1-6}alkynyl, -OR^5, –NR^5R^6, -$C(=NR^5)NR^6R^7$, -$N(=NR^5)NR^6R^7$, –NR^5COR^6, -$NR^5CO_2R^6$, -$NR^5SO_2R^8$, –$NR^5CONR^6R^7$,–SR^8, -SOR^8, –SO_2R^8, –$SO_2NR^5R^6$, -COR^5, -CO_2R^5, –$CONR^5R^6$, -$C(=NR^5)R^6$,–$C(=NOR^5)R^6$, aryl or heterocycle substituents or a pharmaceutically acceptable salt thereof;

wherein the compound is isotopically labeled with at least one ^{11}C, ^{13}C, ^{14}C, ^{18}F, ^{15}O, ^{13}N, ^{35}S, ^{2}H, or ^{3}H atom.

5. The compound of claim 1 wherein A is pyridinyl, pyrrolyl, imidazolyl, pyridazinyl, pyrimidinyl, pyrazoyl, pyrazinyl, triazolyl, triazinyl, tetrazolyl, tetrazinyl, tetrazepinyl, isoxazolyl, oxazolyl, oxadiazolyl, oxatriazolyl, oxazinyl, oxadiazinyl, isothiazolyl, thiazolyl, thiadazinyl, thiadiazolyl, thiadiazepinyl, dioxazolyl, oxathiazolyl, oxathiazinyl, oxazepinyl, oxadiazepinyl, azepinyl, and diazepinyl, optionally substituted with one to five independent halogen, –CN, NO_2, -C_{1-6}alkyl, -C_{1-6}alkenyl, -C_{1-6}alkynyl, –OR^1, –NR^1R^2, –$C(=NR^1)NR^2R^3$, –$N(=NR^1)NR^2R^3$, –NR^1COR^2,

$-NR^1CO_2R^2$, $-NR^1SO_2R^4$, $-NR^1CONR^2R^3$, $-SR^4$, $-SOR^4$, $-SO_2R^4$, $-SO_2NR^1R^2$, $-COR^1$, $-CO_2R^1$, $-CONR^1R^2$, $-C(=NR^1)R^2$, or $-C(=NOR^1)R^2$ substituents;

R^1, R^2, and R^3 each independently is $-C_{0-6}$alkyl, $-C_{3-7}$cycloalkyl, heteroaryl, or aryl; any of which is optionally substituted with 1-5 independent halogen, $-CN$, $-C_{1-6}$alkyl, $-O(C_{0-6}$alkyl), $-O(C_{3-7}$cycloalkyl), $-O$(aryl), $-N(C_{0-6}$alkyl)(C_{0-6}alkyl), $-N(C_{0-6}$alkyl)(C_{3-7}cycloalkyl), $-N(C_{0-6}$alkyl)(aryl) substituents;

R^4 is $-C_{1-6}$alkyl, $-C_{3-7}$cycloalkyl, heteroaryl, or aryl; optionally substituted with 1-5 independent halogen, $-CN$, $-C_{1-6}$alkyl, $-O(C_{0-6}$alkyl), $-O(C_{3-7}$cycloalkyl), $-O$(aryl), $-N(C_{0-6}$alkyl)(C_{0-6}alkyl), $-N(C_{0-6}$alkyl)(C_{3-7}cycloalkyl), $-N(C_{0-6}$alkyl)(aryl) substituents;

B is pyridinyl or phenyl, optionally substituted with one to five independent halogen, $-CN$, NO_2, $-C_{1-6}$alkyl, $-C_{1-6}$alkenyl, $-C_{1-6}$alkynyl, $-OR^5$, $-NR^5R^6$, $-C(=NR^5)NR^6R^7$, $-N(=NR^5)NR^6R^7$, $-NR^5COR^6$, $-NR^5CO_2R^6$, $-NR^5SO_2R^8$, $-NR^5CONR^6R^7$, $-SR^8$, $-SOR^8$, $-SO_2R^8$, $-SO_2NR^5R^6$, $-COR^5$, $-CO_2R^5$, $-CONR^5R^6$, $-C(=NR^5)R^6$, $-C(=NOR^5)R^6$, aryl or heterocycle substituents;

R^5, R^6, and R^7 each independently is $-C_{0-6}$alkyl, $-C_{3-7}$cycloalkyl, heteroaryl, or aryl; any of which is optionally substituted with 1-5 independent halogen, $-CN$, $-C_{1-6}$alkyl, $-O(C_{0-6}$alkyl), $-O(C_{3-7}$cycloalkyl), $-O$(aryl), $-N(C_{0-6}$alkyl)(C_{0-6}alkyl), $-N(C_{0-6}$alkyl)(C_{3-7}cycloalkyl), $-N(C_{0-6}$alkyl)(aryl) substituents;

R^8 is $-C_{1-6}$alkyl, $-C_{3-7}$cycloalkyl, heteroaryl, or aryl; optionally substituted with 1-5 independent halogen, $-CN$, $-C_{1-6}$alkyl, $-O(C_{0-6}$alkyl), $-O(C_{3-7}$cycloalkyl), $-O$(aryl), $-N(C_{0-6}$alkyl)(C_{0-6}alkyl), $-N(C_{0-6}$alkyl)(C_{3-7}cycloalkyl), $-N(C_{0-6}$alkyl)(aryl) substituents or a pharmaceutically acceptable salt thereof; and

wherein the compound is isotopically labeled with at least one ^{11}C, ^{13}C, ^{14}C, ^{18}F, ^{15}O, ^{13}N, ^{35}S, ^{2}H, or ^{3}H atom;

and except when A = 6-methyl-2-pyridyl then B cannot be 3-methoxyphenyl or unsubstituted phenyl.

6. The compound of claim 1 wherein A is selected from isothiazol-3-yl (1,2-thiazol-3-yl); thiazol-4-yl (1,3-thiazol-4-yl); thiazol-2-yl (1,3- thiazol-2-yl); oxazol-3-yl and oxazol-4-yl; 2-pyridinyl; 3-pyridinyl; 2-pyrrolyl; 3-pyridazinyl (1,2-diazin-3- yl); pyrimidin-4-yl (1,3-diazin-4-yl); pyrazin-3-yl (1,4-diazin-3-yl); pyrimidin-2-yl (1,3- diazin-2-yl); 1,3-isodiazol-4-yl; 1,3-isodiazol-2-yl; 1,2,3-triazin-4-yl; 1,2,4- triazin-6-yl; 1,2,4-triazin-3-yl; 1,2,4-triazin-5-yl; 1,3,5-triazin-2-yl; 1,2,3-triazol-4-yl; 1,2,4-triazol-3-yl; tetrazolyl; 1,2,4-thiadiazol-3-yl; 1,2,3- thiadiazol-4-yl; 1,3,4-thiadiazol-2-yl; 1,2,5-thiadiazol-3-yl; 1,2,4- thiadiazol-5-yl; 1,2,4-oxadiazol-3-yl; 1,2,3-oxadiazol-4-yl; 1,3,4-oxadiazol-2-yl; 1,2, 5-oxadiazol-3-yl and 1,2,4-oxadiazol-5-yl.

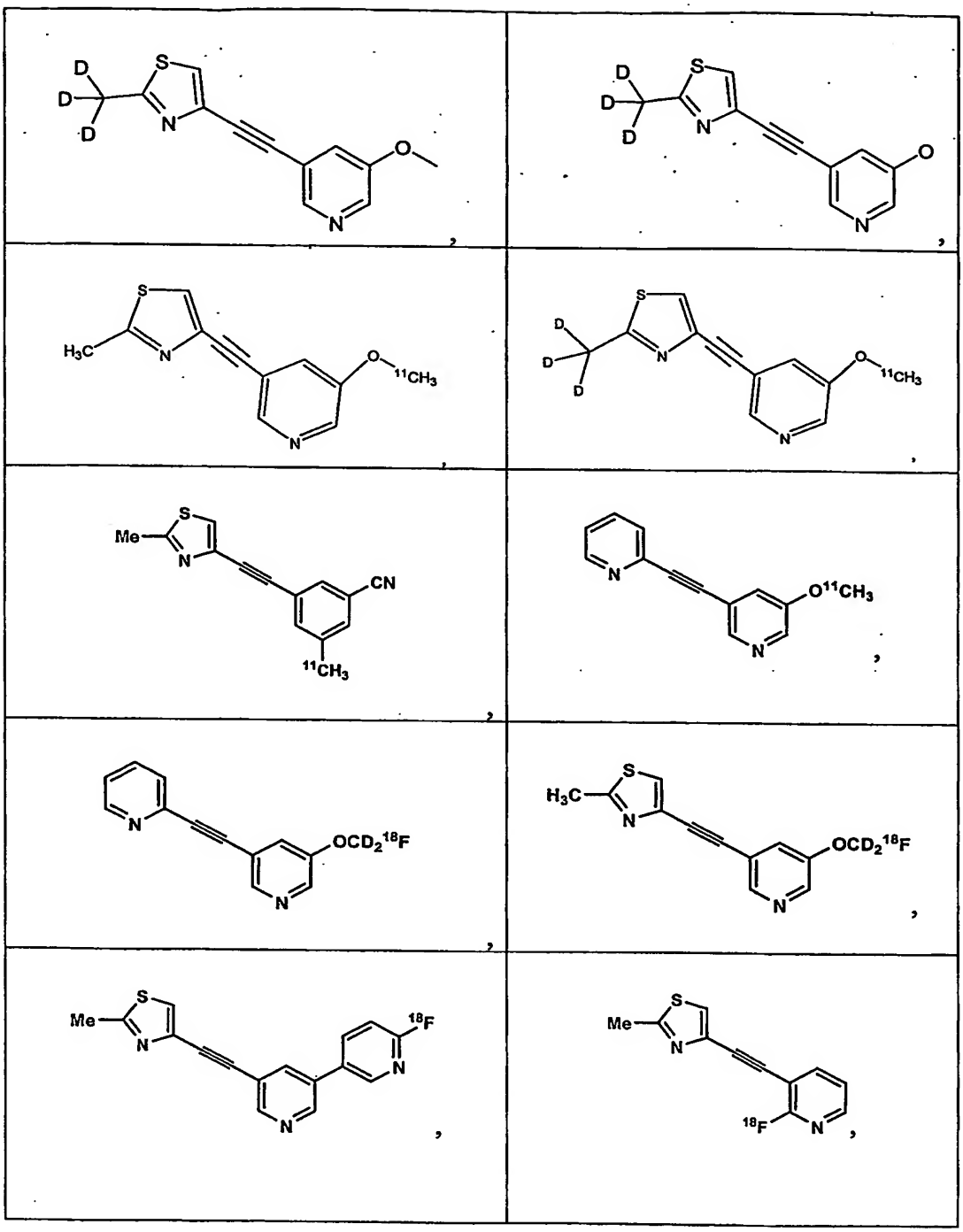
7. The compound of claim 6, wherein A is thiazolyl or isothiazolyl.

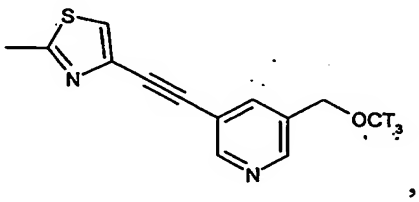
8. The compound of claim 1 wherein B is a substituted or unsubstituted aryl, cycloalkyl, cycloalkenyl, cycloalkadienyl, cycloalkatrienyl, cycloalkynyl or cycloalkadiynyl, bicyclic hydrocarbon wherein two rings have two atoms in common, or a substituted or unsubstituted heterocycle, optionally containing one or more double bonds.

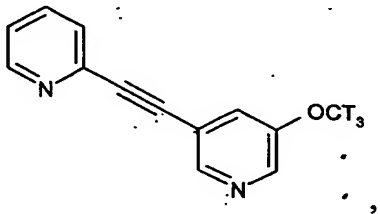
9. The compound of claim 8 wherein B is cyclopropanyl, cyclopentenyl and cyclohexenyl, indenyl, dihydroindenyl, phenyl, naphthalenyl dihydronaphthalenyl, thiazolyl, furyl, dihydropyranyl, dihydrothiopyranyl, piperidinyl, isoxazolyl, pyridinyl, pyridazinyl, pyrimidinyl, pyrazinyl, indolyl and isoquinolinyl.

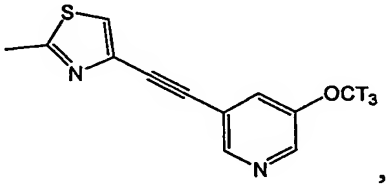
10. The compound of claim 9, wherein B is pyridinyl or phenyl.

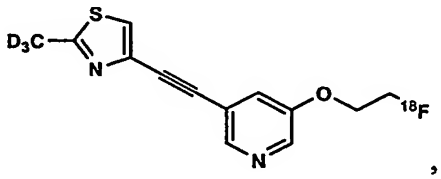
11. An isotopically labeled compound selected from:

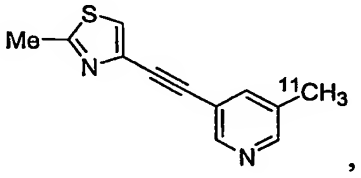


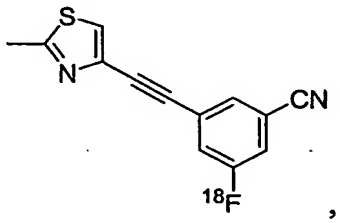

S
N
OCT3
N

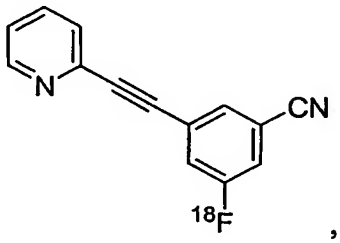

N
OCT3
N

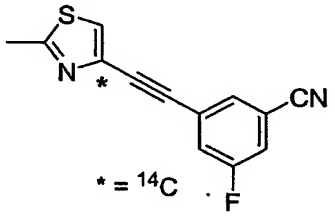

S
N
OCT3
N

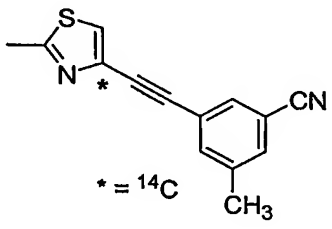

D3C
S
N
O
18F
N

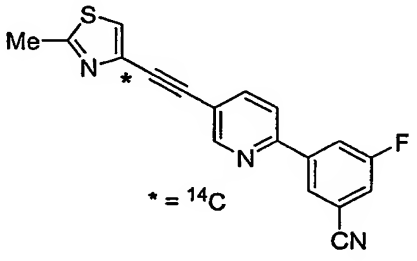

Me
S
N
11CH3
N

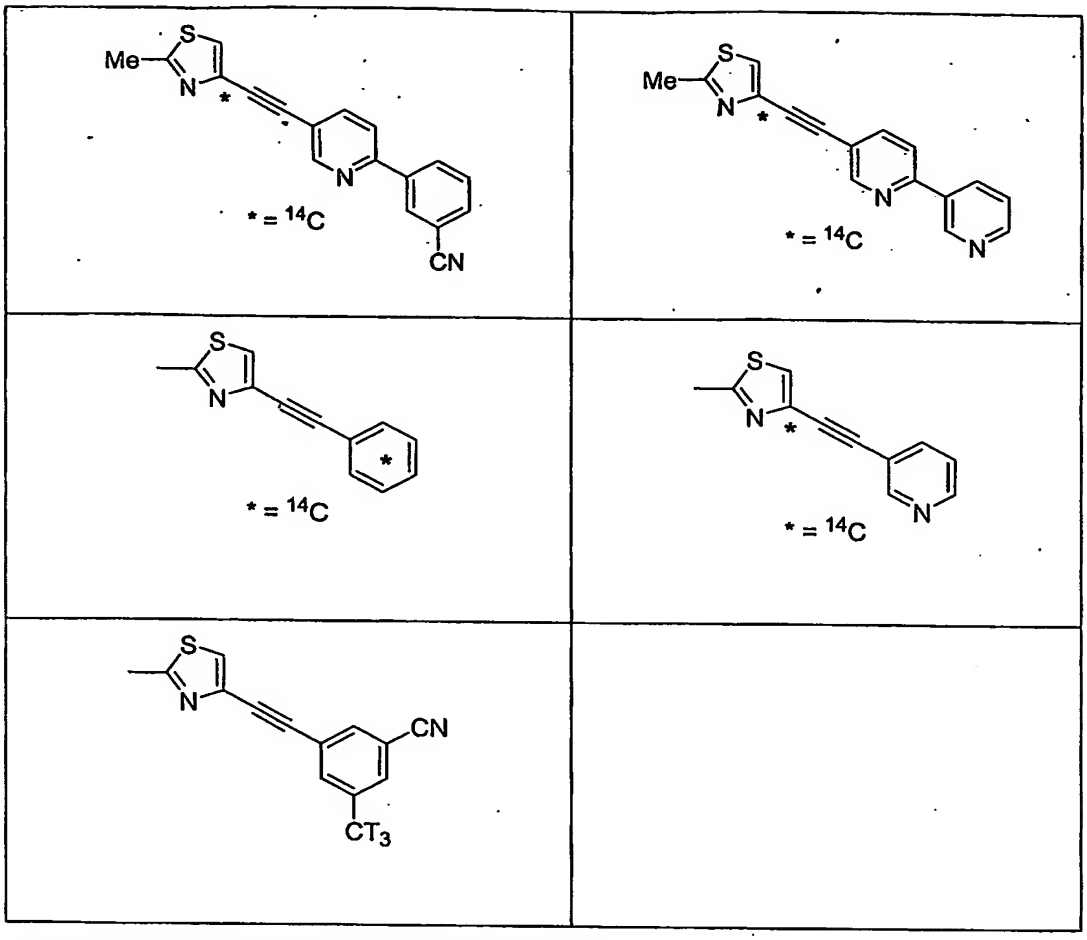

S
N
CN
18F


N
CN
18F


S
N
*
CN
* = 14C
F


S
N
*
CN
* = 14C
CH3


Me
S
N
*
F
N
* = 14C
CN



or a pharmaceutically acceptable salt thereof.

12. A method for the preparation of the isotopically labeled compounds according to Claim 1 comprising the steps of reacting a precursor of a compound of Claim 1 with an isotopically labeled reagent containing one or more isotopes selected from ^{11}C, ^{13}C, ^{14}C ^{18}F, ^{15}O, ^{13}N, ^{35}S, ^{2}H, and ^{3}H which is capable of reacting with said precursor wherein said isotopically labeled reagent produces an isotopically labeled substituent on said substrate using standard organic synthetic chemistry procedures to produce a compound of Claim 1.

13. A method of performing positron emission tomography (PET) imaging comprising a step of administering a compound according to claim 1 as a tracer compound.

14. A method of performing positron emission tomography (PET) imaging comprising a step of administering a compound according to claim 5 as a tracer compound.

15. A method for imaging metabotropic glutamate receptors in a metabotropic glutamate receptor-rich tissue comprising:

a) administering an effective quantity of an isotopically labeled metabotropic glutamate receptor ligand according to claim 1;

b) positioning the subject in a PET device;

c) performing the emission scan of the metabotropic glutamate receptor-rich tissue, and obtaining a PET image of the tissue; and

d) evaluating the PET image for the presence or absence of focally increased uptake of the isotopically labeled ligand in the tissue.

16. A method for imaging metabotropic glutamate receptors in a metabotropic glutamate receptor-rich tissue comprising:

a) administering an effective quantity of an isotopically labeled metabotropic glutamate receptor ligand according to claim 5;

b) positioning the subject in a PET device;

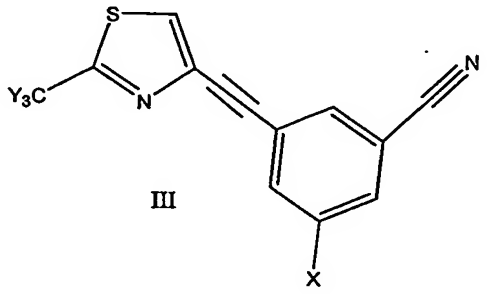
c) performing the emission scan of the metabotropic glutamate receptor-rich tissue, and obtaining a PET image of the tissue; and evaluating the PET image for the presence or absence of focally increased uptake of the isotopically labeled ligand in the tissue.

17. The method of Claim 15 wherein the metabotropic glutamate receptor-rich tissue is cerebral tissue or neurotissue.

18. The method in Claim 15 where the tracer in the PET imaging allows monitoring of the metabolic activity of metabotropic receptors *in vivo*.

19. A method for diagnosing and monitoring the treatment of metabotropic glutamate receptor-modulated conditions, diseases or disorders comprising a step of administering to a patient suspected of having said condition, disease, or disorder an effective tracer amount of the compound of claim 11.

20. An isotopically labeled compound of Formula III wherein X is $-^{11}CH_3$ or ^{18}F and Y is H or ^{2}H:



III

or a pharmaceutically acceptable salt thereof.

21. A method of performing positron emission tomography (PET) imaging to determine the receptor occupancy of a mGluR5 agonist or antagonist comprising a step of administering a compound according to claim 1 as a tracer.

22. A method of using an isotopically labeled compound to determine the receptor occupancy of a mGluR5 agonist or antagonist comprising a step of administering a compound according to claim 1 as a tracer.